

to form a median canal which passes from the basisphenoid to the suture between that and the basioccipital, where it terminates in the median canal continued to the orifice described by M. De Blainville as the posterior nostril. The second passage leads from the floor of the tympanic cavity to a short canal which bends towards its fellow, expands into a sinus and divides: one branch descends and terminates in the small lateral foramen at the lower end of the suture between the basioccipital and the basisphenoid: the other branch continues the course inwards and downwards until it meets its fellow at the median line of the basioccipital, and it forms the posterior primary division of the common median canal: this soon joins the anterior division, and the common canal terminates at the median opening below. Membranous tubes are continued from the three osseous ones, and converge to terminate finally in the single Eustachian orifice on the soft palate behind the posterior nostril. The mucous membrane of the palate lines the various osseous canals above described, and is continued by them into the lining membrane of the tympanum."

With regard to the homologies of the above described air-passages, the author states that the lateral canals answer to the simple Eustachian tubes of Lizards and Mammals, and that the median canal, with its dichotomous divisions, is a speciality peculiar to the Crocodilian reptiles.

The memoir was illustrated by nine drawings of the size of nature.

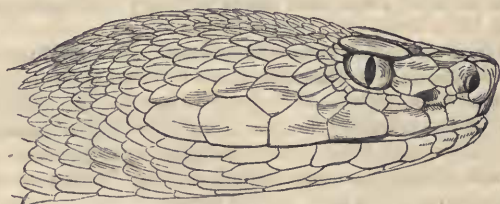
#### ZOOLOGICAL SOCIETY.

July 24, 1849.—John Edward Gray, Esq., F.R.S., in the Chair.

The following papers were read:—

1. NOTES ON THE SERPENTS OF ST. LUCIA. BY LIEUT. TYLER, R.E. COMMUNICATED BY THE SECRETARY.

Of the snakes of the island of St. Lucia, the most numerous species is the "*Rat-tail*;" then follow the "*Couresse*," the "*Clibro*," and the "*Tête Chien*;" and in this order I propose to give you, as I promised, a short description of each.



1. CRASPEDOCEPHALUS ATROX, Gray. The Rat-tail Serpent.

This much-dreaded serpent, which attains a length of from five to six, and sometimes even seven feet, and a circumference of from four to five inches, bears a strong resemblance, as to its shape and nature,

to the common Rattle-snake of America, and is the more dangerous from its being unprovided with the means of warning its victims.

The Rat-tail appears to be ovoviviparous; and it is said that after producing her young she leaves them for a short time, and that she devours those among them which she finds in the same spot on her return. This seems to be a most improbable construction to place upon the fact of their being sometimes found in the belly of the mother, which to my idea rather tends to corroborate statements which have been already made of the female's opening her mouth in cases of danger, and the young rushing down her throat for protection. The scales of the Rat-tail are large in proportion, and carinated; the number of abdominal scuta is 213, and there are 69 pairs of subcaudal squamæ. The head is heart-shaped, very large at the back, and flat, and is covered with small scales; the eye resembles in some measure that of the cat, though, as in all the serpent-tribe, it is without outer lids, and therefore apparently always on the watch, which appearance is kept up even after death. The shape of this serpent differs from that of the others hereafter mentioned, in being more broad, or lying more flatly on the ground; and the tail, instead of tapering gently from the body, becomes suddenly small, and, as the name implies, is much like that of a rat. When not in motion, the Rat-tail is almost invariably coiled up in a circle, with its head on the top. Its movements are fortunately not so rapid as those of the other serpents of the island, and to this circumstance may be attributed the advantage always gained over it by its deadly enemy the Clibro, which will be presently referred to. The Rat-tail is armed with two fangs, or hollow teeth, placed one at each side of the extremity of the upper jaw, frequently seven-eighths of an inch in length, with a small slit at the point and towards the front, through which the poisonous liquid, a yellow viscid matter, is ejected; and it has two rows of teeth down the centre of the mouth for purposes of deglutition.

An important point in the history of this serpent is the method of treating its venomous bites. If the wounds caused by these be not at once attended to, the most fatal consequences ensue, and within a short space of time. Should the fang penetrate any large blood-vessel, and inject therein any of the poisonous matter, I suppose that no remedy would be of avail: but under ordinary circumstances, if the wound can be at once laid open, a ligature tied between it and the heart, and sucked, then rubbed with a mixture of lime-juice, rum and salt, and intoxication and sleep produced by administering rum-punch with plenty of lime-juice in it to the patient, there is little danger of loss of life; as is proved by the fact, that out of thirty soldiers treated in this way some time since in this island, only one died.

The person sucking the wound has nothing to fear if he has no sore in his mouth.

There are native "*panseurs*" who pretend to the knowledge of certain herbs, which they mix with rum, gunpowder, salt and lime-juice, and place upon the wound in the shape of a poultice, after well-cutting, sucking and squeezing it, and concoctions of which they cause the unfortunate patient to drink; but they appear to produce

no decided relief to the patient, and although perhaps very good as poultices to any inflammatory wounds, I do not imagine that these herbs possess any antidotal properties to the venom of the serpent. It is calculated that at the least twenty persons die annually in St. Lucia from the bites of these serpents; and, as I have often heard it stated that in nineteen cases out of twenty the patient recovers, it may be inferred that 180 people per annum are maimed or dangerously wounded by them.

2. ———? ———? The Couresse.

The Couresse is a beautifully-formed little snake, perfectly harmless, from two and a half to three feet in length, and seldom attaining more than  $2\frac{1}{2}$  inches in circumference, with 96 abdominal scuta and 86 rows of subcaudal squamæ.

Its small head, bright attractive eye, quick and elegant motion, and its tapering body and tail, present a remarkable contrast to the corresponding characteristic of the last-mentioned Rat-tail serpent.

The colour of the Couresse varies much; they are generally found of a dark blue colour, with white and grey variegations of every possible shape; sometimes however yellowish brown prevails, but spotted in a similar manner; the belly is white, slightly tinged with blue, and at the point of junction of the abdominal and other scales is always found a dark spot.

Four rows of small teeth are to be found in the upper jaw and two rows in the lower. The head is covered by large scales.

The Couresse cannot exist long without water, and will even drink milk. When kept in a box with a vessel of water for their use, they are more frequently found in the water than out of it, this being their only protection against their deadly enemies the ants.

This snake is oviparous: the longest diameter of the eggs is five lines, the shortest three lines. It feeds upon lizards, crapauds, mice, and other small animals and reptiles.

3. COLUBER CONSTRICTOR? The Clibro.

The Clibro is found in this island as long as five and six feet, and as large as from three and a half to four inches in circumference. It is perhaps one of the most remarkable and useful of its species: it has 236 abdominal scuta and 72 rows of subcaudal squamæ, is of a bluish colour with a white belly, and after its change of skin shines like marble. The head is small, covered with large scales, and the eye dark blue and opaque. There are four rows of small teeth in the upper jaw and two in the lower. The longest diameter of the egg is eighteen lines, the shortest nine.

One peculiarity of the Clibro is its apparently total disregard of man.

But its great singularity consists in its choice of food. It lives principally upon other serpents, and of those chiefly the Rat-tail, which it has not the power of killing until after it has swallowed it, whose bite, so fatal to the human species and all other animals (in some cases killing even horses), has no effect upon the Clibro; for I



have myself seen distinctly on more than one occasion, in their combats, the fang of the Rat-tail enter into the body or head of the Clibro, and bring blood from the spot, while the Clibro has taken no more notice of it than to get the head of the Rat-tail into his mouth as quickly as possible and begin to swallow him. I have satisfactorily proved that the Clibro does not kill his prey before he has swallowed it, by allowing a Clibro to swallow a Couresse, all excepting the very point of his tail, then pulling him out, after a short interval giving it to him again, pulling out the Couresse by the tip of his tail as before, and keeping him alive for months afterwards.

The common belief is that the Clibro, when bitten by the Rat-tail, rubs himself in a grass which is commonly found in uncultivated land ; but this I have at all events shown to be an unnecessary proceeding on the part of the Clibro.

It may not be uninteresting to describe here a fight which I witnessed some months since between a large Clibro and Rat-tail, the latter being nearly half as thick again as the former, but not so long ; they were each however upwards of four feet in length.

Upon being placed together in a barrel, the Clibro immediately seized the Rat-tail by the middle, and twisted three times round him, in doing which the Rat-tail bit him in the back, and drew blood ; they both then remained perfectly quiet for a few seconds, when the Clibro moved his head slowly up behind his own body, and looking over it, advanced under its cover, to the point which lay nearest to the head of the Rat-tail, which was between four and five inches distant ; waiting about a couple of seconds in this position—the Rat-tail never having moved all this time—the Clibro made a dart, and with almost incredible rapidity seized the head of the Rat-tail in his mouth, and began to swallow him, which he accomplished in rather more than three hours.

But the Clibro does not confine itself to snakes of other species, for on one occasion I lost a large Clibro by its being eaten by another. The two had lived for weeks together in the same drawer, and there was no great difference between them in size : having offered them food a few days previously, they refused it, and on my next visit I found only one in the drawer. Not being able to discover the means of egress of the missing Clibro, I then began to remark that the one in the drawer was thicker than usual, and after taking him out and disturbing him a little, he vomited up his late friend in a half-digested state, but enough of him was left to enable me to recognise his scales.

#### 4. BOA DIVINOLOQUA, Dum. et Bibr. The Boa.

The St. Lucian Boa, which is called by the natives "*Tête Chien*," from the resemblance of its head to that of a greyhound, is found in great numbers in cane-pieces, where it is highly valued as a means of destroying rats, but so feared that few natives can be induced to touch or even approach very near to it.

This fear is however perfectly unnecessary, as although it constantly leaves its teeth in the object of its attack, no result more than from the scratch of a thorn ensues.

The general length of the Boa of this island is from eight to ten feet, and it is rarely found longer than fourteen feet. It feeds upon rats, birds, cats, rabbits, fowls, and all small animals. Its head is covered with small scales, unlike the generality of harmless serpents. The scales over the body are small and smooth, and beautiful tints may be observed in them when exposed to a strong light or in the sun. The abdominal scuta are 280 in number, and the subcaudal squamæ consist of 70 rows. I believe the Boa to be viviparous, from some young having been cut out of the womb of a dead female.

The Boa has the property of being able to live for a great length of time without food, water, and almost without air. I have witnessed cases of their existing in drawers and boxes unopened for months, and I have been told upon good authority of a case of a Boa looking as well and as fat after thirteen months of this species of confinement as before it.

I am unable to fix any regular period for the changes of skin to which all serpents are liable, and which appears greatly to depend upon the state of their stomachs.

## 2. CHARACTERS OF THREE NEW GENERA AND SPECIES OF LEPIDOPTERA. BY WILLIAM WING, M.E.S.

### Fam. NOCTUIDÆ.

#### 1. CALIGATUS, n. g.

*Palpi* short, ascending; densely clothed with scales; penultimate joint long: *antennæ* bipectinated at the base, and bearded ♂: *head* small, rounded, nearly concealed: *thorax* with a large, acute crest in front: *abdomen* long, furnished with two anal tufts, ♂: *anterior wings* acute at tip, broad, dentate, slightly deflexed; *posterior wings* abbreviated. Type,

#### CALIGATUS ANGASII, n. sp.

*Sp. Ch.*—Body and base of the anterior wings of a bright fawn-colour, with a triangular diaphanous patch at the costa, another of an oval form between the costa and posterior margin, and a nearly square patch in the centre of the outer margin. General colour of the apical half of the wing pink, varied with yellow and fawn-colour; posterior wings diaphanous, with a broad ashy brown margin marked with a triangular yellow spot, and a lunular pink spot at the inner angle; cilia of all the wings white. In the male the metatarsi and tibiæ are densely clothed with long hair-like scales, making them appear very broad and flat. I have named this species after Mr. Angas, who has recently explored the highly interesting country of which this is a native, the Cape of Good Hope. In the collection of the British Museum.

#### 2. TRICHOMAPLATA, n. g.

*Palpi* short, ascending; penultimate joint somewhat wedge-shaped *antennæ* long, bipectinated at the base: *thorax* with a very small crest in front; scapular plates furnished with long pencils of hairs: *body* long, tufted at the extremity, ♂: *anterior wings* deflexed, lanceolate, entire. Type,